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Available online 09 April 2018

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https://doi.org/10.1016/j.ejvs.2018.02.036

Re: "Near Infrared Spectroscopy as a Predictor for Shunt Requirement During Carotid Endarterectomy"

I read with great interest the article of Jonsson et al.[1] I congratulate them for such a contribution to our surgical knowledge with their meticulously designed prospective study about deciding whether to shunt during carotid endarterectomy surgery. However, I believe a few points need to be further clarified.

Several cerebral monitoring modalities such as transcranial Doppler (TCD), near infrared spectroscopy (NIRS), jugular venous oxygen saturation, carotid artery stump pressure (SP), and bispectral index (BIS) have been used to identify the need for shunting in patients during carotid endarterectomy. NIRS is an easy, inexpensive, non-invasive technique, applicable to all patients and allows continuous monitoring of cerebral blood flow to detect cerebral ischaemia, which may lead to the peri-operative stroke.

Stump pressure measuring is an inexpensive method to measure the internal carotid artery pressure (backflow) and reflects the status of the Circle of Willis; however, it does not provide any information about the adequacy of cerebral perfusion during cross-clamping. Contralateral carotid artery occlusion is also a risk factor for low stump pressure. To avoid neurocognitive dysfunction, it is recommended to provide cerebral blood flow with an intra-arterial shunt or with the help of Circle of Willis collateral circulation from the contralateral carotid artery and vertebral—basilar arterial system. Shunting was required in 10—15% of patients undergoing carotid endarterectomy while 85—90% of those were shunted unnecessarily. Inadequate shunt flow, shunt thrombosis, carotid artery dissection, and plaque/air embolisation are potential complications of shunting; additionally, it may also reduce the exposure of the distal portion of the plaque which may lead to peri-operative stroke. The reported risk rate of emboli or dissection during CEA was 1—3%.[2] Shunting during eversion endarterectomy, endarterectomy first, or shunting first technique, and preferring patch closure or not, are of the utmost important for deciding whether to shunt during carotid endarterectomy surgery. These challenging points are major pitfalls of carotid endarterectomy surgery.

Cossman et al.[3] reported that to accurately measure the stump pressure as indicated, the needle should be inserted into the internal carotid artery instead of the common carotid artery. Briefly, measuring the stump pressure from the internal carotid artery distal to the stenosis is of the utmost important. High false negative results for stump pressure measurement were reported in some previous studies.[1,4,5] I thought that measuring the stump pressure from the common carotid artery proximal to the stenosis should increase the false positive results instead of false negative results. In other words, measuring stump pressure before the stenosis usually leads to a lower evaluation of the stump pressure and leads to unnecessary shunting. In this regard, NIRS provides a lower ratio of wrong measurements than stump pressure measurement. Therefore, I believe that the opinions of the authors about this issue would add value to their study.

CONFLICT OF INTEREST

None.

FUNDING

None.

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Available online 24 April 2018

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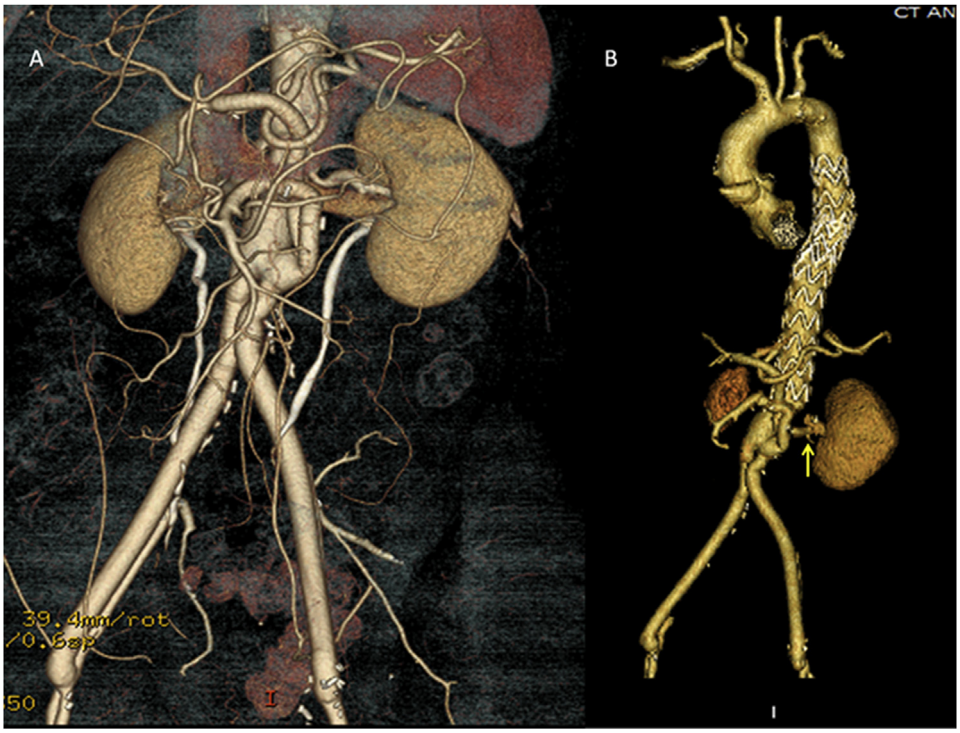
https://doi.org/10.1016/j.ejvs.2018.02.038
DOI of original article: https://doi.org/10.1016/j.ejvs.2017.02.033

COUP D'OEIL

A Hybrid Procedure for Suprarenal Aneurysm after Previous Aortobifemoral and Visceral Vessel Bypass

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A 61 year old male had presented 13 years earlier with infrarenal aortic occlusion and chronic mesenteric ischaemia. An aortobifemoral bypass (Maquet 16 × 8 mm, Intergard) and bifurcated bypasses (12 × 6 mm) off the lower main body to the coeliac axis and superior mesenteric artery had been performed (A). Recently, the patient presented with suprarenal aneurysmal dilatation to T8. Anatomy was not favourable for fenestrated endografting. A successful hybrid procedure including a bypass from the SMA limb to the left renal artery was performed (B; yellow arrow). A 32 × 178 × 28 mm thoracic stent graft (Zenith Alpha, Cook Medical, Bloomington, IN, USA) was placed within the proximal aortobifemoral graft extending to T7.

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1078-5884/Published by Elsevier B.V. on behalf of European Society for Vascular Surgery.
https://doi.org/10.1016/j.ejvs.2018.03.031